

38 Exeter Road, London

**Scoped Environmental Impact
Study**

Prepared for:

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NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Executive Summary

Natural Resource Solutions Inc. (NRSI) was retained by private landowner Dr. Raj Khanuja to complete a Scoped Environmental Impact Study (EIS) and Tree Preservation Plan for a proposed retail development at 38 Exeter Road, London Ontario. The subject property is approximately 0.42ha in size and located northwest of the intersection of Exeter Road and Wonderland Road South.

A Record of Pre-Application Consultation provided by the City of London outlines the requirement for a Scoped EIS to address Species at Risk concerns, specifically Butternut, as well as a Tree Preservation Plan.

Natural heritage information was collected and reviewed to identify key natural heritage features, habitats and species that are reported from, or have the potential to occur within the study area. An Ecological Land Classification (ELC), tree inventory, bat habitat assessment, and a spring vegetation survey were conducted to characterize the subject property.

No Butternuts were documented on the subject property. Candidate Significant Wildlife Habitat was assumed present within the agricultural lands adjacent to the subject property, however no significant habitat or features were identified on the subject property.

The potential impacts of the proposed development include; vegetation removal, sedimentation and erosion, injury to trees, and impacts to wildlife and vegetation communities. The recommended mitigation strategies to address these potential impacts will ensure that there are no significant negative ecological impacts. These strategies include the following proposed conditions of approval, to be considered during the next design stage:

- An updated Tree Preservation Plan once the design and grading for the proposed development has been finalized;
- The installation and maintenance of heavy-duty combined sediment and erosion control fence and Tree Protection Fencing, supervised by a Certified Arborist, including immediate removal once construction activities have concluded; and
- Tree removal should occur with consideration to the protection and general timing windows for migratory birds and species at risk bats (April 1- September 30).


38 Exeter Road, London

Scoped Environmental Impact Study

Project Team

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Report submitted on October 14, 2022



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1.0 Introduction

Natural Resource Solutions Inc. (NRSI) was retained by private landowner, Dr. Raj Khanuja, in March 2022 to complete a Scoped Environmental Impact Study (EIS) and Tree Preservation Plan in support of a proposed re-zoning and retail development at 38 Exeter Road, London Ontario, henceforth referred to as the “subject property”.

The subject property is approximately 0.42ha in size and located northwest of the intersection of Exeter Road and Wonderland Road South. The subject property is currently vacant and undeveloped, and contains treed areas and is adjacent to retail areas and agricultural lands (Map 1). The degraded treed area on the subject property contains primarily Black Walnut (*Juglans nigra*) with sporadic Eastern Cottonwood (*Populus deltoides*) in the upper canopy, and a number of invasive species in the understory, including Tatarian Honeysuckle (*Lonicera tararica*), Garlic Mustard (*Alliaria petiolate*) and Virginia Creeper (*Parthenocissus vitacea*). According to the London Plan Natural Heritage mapping (City of London 2019), the subject property does not contain any Natural Heritage System features, nor is the area regulated by the Upper Thames River Conservation Authority (UTRCA).

In response to the Proposal Summary submitted by the Dr. Raj Khanuja in December 2021, the City of London provided a Record of Pre-Application Consultation which outlined that the subject property is located in a Holding Restricted Service Commercial Zone which does not permit the proposed retail development; and therefore, re-zoning is required. The Record of Pre-Application Consultation also outlines the requirement for a Scoped EIS “to address Species at Risk (SAR) concerns for potential Butternut (*Juglans cinerea*) present in [the] Black Walnut stand” as well as a Tree Preservation Plan to allow for any proposed tree removals (Appendix I).

This report contains the detailed findings of the Scoped EIS including the characterization of existing natural features based on the results of a background review and original field surveys. The detailed characterization was used to inform an analysis of the significance and sensitivity of natural features, the identification of any natural feature constraints in association with land use policy designations, and the assessment of potential impacts and mitigation measures associated with details of the proposed development. This report has been developed in accordance with the *Environmental Impact Study (EIS) Requirements* (City of London 2021)

and the *London Plan* (City of London 2019), and meets the Accessibility for Ontarians with Disabilities Web Content Accessibility Guidelines (AODA WCAG 2.0 AA).

1.1 Project Scope

This EIS was scoped according to discussions with City of London and UTRCA staff during the Pre-Application Consultation meeting on January 4th 2022, and following correspondence with City of London Environmental Planner, Monica Wu. An Environmental Study Scoping Checklist Report was submitted to City and UTRCA staff on March 14th, 2022 (Appendix II). The checklist identified that a wildlife habitat assessment, visual Butternut search, bat habitat assessment, botanical inventory, vegetation community classification (ELC), and tree inventory would be required. No further additions or edits were identified following this submission.

1.1.1 Study Area

For the purposes of this report, term “study area” refers to the subject property, and lands surrounding the subject property, to include adjacent lands (120 m). Additionally, the study area review includes data from the Natural Heritage Information Centre (1x1 km squares) natural heritage background data and the areas covered by the wildlife atlases (10x10 km squares).

1.2 Policy Context

Natural features identified during background review and field investigations were evaluated against relevant policies, legislation, and planning studies (Table 1) to help inform suitable land-use concepts, guide the layout of development, and identify areas to be protected.

Table 1. Relevant Policies, Legislation and Planning Studies.

Policy/Legislation	Description	Project Relevance
Provincial Policy Statement (OMMAH 2020)	<ul style="list-style-type: none"> • Issued under the authority of Section 3 of the Planning Act and came into effect on May 1, 2020, replacing the 2014 PPS (OMMAH 2014). • One of the key goals of the PPS is to “[provide] for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment.” • Section 2.1 of the PPS – Natural Heritage establishes clear direction on the adoption of an ecosystem approach and the protection of 	<ul style="list-style-type: none"> • Based on the background review, pre-construction monitoring reports and SAR/SCC screening, several natural features afforded consideration within the PPS have the potential to occur in the study area, including: <ul style="list-style-type: none"> ○ Significant Wildlife Habitats, and ○ Habitat for endangered and threatened species.

Policy/Legislation	Description	Project Relevance
	<p>resources that have been identified as 'significant'. This section also identifies that natural features are to be protected for the long term.</p> <ul style="list-style-type: none"> Section 2.1.5 of the PPS identifies that development and site alteration shall not be permitted within the area outlined in sub-sections a) – f) <i>“unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.”</i> The Natural Heritage Reference Manual (OMNR 2010) and the Significant Wildlife Habitat Technical Guide (OMNR 2000) were prepared by the MNRF to provide guidance on identifying natural features and in interpreting the Natural Heritage sections of the PPS. 	
<p>Endangered Species Act (Government of Ontario 2007)</p>	<ul style="list-style-type: none"> The original ESA, written in 1971, underwent a year-long review which resulted in a number of changes which came into force in 2007. The ESA prohibits killing, harming, harassing, or capturing Endangered or Threatened and protects their habitats from damage and destruction. 	<ul style="list-style-type: none"> Based on information available through background documents and field surveys, including the SAR/SCC screening, several SAR were identified as potentially having suitable habitat within the subject property, including: <ul style="list-style-type: none"> Butternut (<i>Juglans cinerea</i>); Eastern Small-footed Myotis (<i>Myotis leibii</i>); Northern Myotis (<i>Myotis septentrionalis</i>); and Monarch (<i>Danaus plexippus</i>)
<p>Migratory Birds Convention Act (Canadian Wildlife Service (CWS) 2017)</p>	<ul style="list-style-type: none"> The MBCA protects migratory game birds, insectivorous birds, and several other migratory non-game birds from persecution in the form of harassment. The schedule of on-site work must consider MBCA windows, with timing of breeding bird season typically occurring between April 1 and August 31, however, this is a guideline, since the MBCA applies to nesting bird species. “Incidental take” is considered illegal, with the exception of a permit obtained by the Canadian Wildlife Service (CWS). 	<ul style="list-style-type: none"> The timing of construction activities, especially vegetation clearing and site grading must have consideration for the MBCA timing windows.

Policy/Legislation	Description	Project Relevance
<p>Fish and Wildlife Conservation Act (Government of Ontario 2019)</p>	<ul style="list-style-type: none"> The FWCA provides protection for certain bird species, not protected under the MBCA (e.g., raptors), as well as furbearing mammals and their dens or habitual dwellings, aside from the Red Fox (<i>Vulpes vulpes</i>) and Striped Skunk (<i>Mephitis mephitis</i>). 	<ul style="list-style-type: none"> The timing of construction activities, especially vegetation clearing and site grading must have consideration for bird nesting and den sites for furbearing mammals.
<p>The Canadian Fisheries Act (Government of Canada 1985)</p>	<p>Last amended in August 2019, the federal <i>Fisheries Act</i> provides for the protection of fish and fish habitat. Fish are protected through two core prohibitions: Section 34.4(1) prohibits the death of fish by means other than fishing, and Section 35(1) prohibits the harmful alteration, disruption, or destruction (HADD) of fish habitat (Government of Canada 2019). Fish habitat is defined as “spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes”.</p>	<ul style="list-style-type: none"> A watercourse is present within the study area, situated in an agricultural field east of the subject property. No Species at Risk fish or fish habitat has been identified within the subject property.
<p>UTRCA Ontario Regulation 157/06 (Government of Ontario 2013)</p>	<ul style="list-style-type: none"> Regulation issued under <i>Conservation Authorities Act</i>, R.S.O. 1990. Through this regulation, the Upper Thames River Conservation Authority (UTRCA) has the responsibility to regulate activities in natural and hazardous areas (i.e. areas in and near rivers, streams, floodplains, wetlands, and slopes). Section 2(1) outlines the regulated natural features within which development is prohibited The Environmental Planning Policy Manual (UTRCA 2017) outlines policies designed to protect natural heritage features and systems from the potentially negative impacts of development and site alteration. 	<ul style="list-style-type: none"> The subject property is not regulated by the UTRCA. A watercourse has been identified to occur within the study area, situated in an agricultural field east of the subject property. The feature is regulated by the UTRCA.
<p>London Plan (City of London 2021)</p>	<ul style="list-style-type: none"> The London Plan was adopted by Council and the Province in 2016 and last consolidated in May, 2021. This official plan outlines current policies for the protection of natural features within the City of London which represent a constraint for development. 	<ul style="list-style-type: none"> Map 1 – <i>Place Types</i> indicates that the subject property is located within a Shopping Area Place Type. Map 5 – <i>Natural Heritage</i> indicates that the subject property does not contain any Natural Heritage System features. A watercourse is present in the study area, within an agricultural field east of Wonderland Road.

Policy/Legislation	Description	Project Relevance
	<ul style="list-style-type: none"> • The <i>Environmental Policies</i> section of the London Plan denotes components of the Natural Heritage System. Natural heritage features and areas such as fish habitat and habitat of endangered species and threatened species are included as part of the Green Space Place Type. • Features such as unevaluated wetlands, unevaluated vegetation patches, valleylands, and potential environmentally significant areas are included in the Environmental Review Place Type. 	<ul style="list-style-type: none"> • Map 6 – <i>Hazards and Natural Resources</i> indicates that the subject property is located on a Highly Vulnerable Aquifer and Significant Groundwater Recharge Area. • Site alteration is not permitted in Habitats of Endangered and Threatened species, which must be identified in the EIS. The subject property may provide suitable habitat for Endangered or Threatened species.
<p>City of London Tree Preservation By-law C.P.-1555-252 (City of London 2016)</p>	<ul style="list-style-type: none"> • Regulates harm or destruction of trees within the Urban Growth Boundary. • Outlines Tree Protection Areas. • Amended by C.P.—1555(b) – 29 on December 21, 2021. • Trees described as Distinctive or located within a Tree Protection Area are protected by this by-law. 	<ul style="list-style-type: none"> • The subject property occurs within the Urban Growth Boundary. • A tree inventory and Tree Preservation Plan must be completed to identify ownership of trees growing along property lines, identify Tree Protection Areas, evaluate significance of vegetation features, and inform tree retention and protection for the development.

2.0 Physical Environment

2.1 Soil, Terrain and Drainage

The study area is in a transition area between the physiographic regions known as Mount Elgin Ridges and Ekfrid Clay Plain (Chapman & Putnam, 1984). The soil profile is characterized by clay-silt till. It is underlain by limestone of the Dundee formation (Atkinson, Davies Inc. 2009). A tributary of Dingman Creek runs north to south, approximately 300 metres west of the subject property.

The subject property lies within the Upper Thames River watershed, which falls under the jurisdiction of the UTRCA. The Upper Thames watershed is 3,420 km² and contains 28 sub-watersheds (UTRCA 2017). The subject property is located within the Dingman Sub-Watershed.

3.0 Natural Environment

3.1 Background Information

3.1.1 Collection and Review of Background Information

Existing natural heritage information was collected and reviewed to identify key natural heritage features, habitats and species that are reported from, or have the potential to occur within the study area. The following background information sources were reviewed to provide an accurate understanding of the physical and biological attributes within the study area:

- The London Plan (City of London 2021);
- Middlesex County Natural Heritage Study (Upper Thames River Conservation Authority (UTRCA) 2014);
- Natural Heritage Information Centre (NHIC) (Ministry of Natural Resources and Forestry (MNR) 2022);
- Natural Heritage Reference Manual (MNR 2010);
- Significant Wildlife Habitat Technical Guide (OMNR 2000);
- Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E (OMNR 2015);
- Significant Wildlife Habitat Support Tool (MNR 2014b);
- Ministry of Natural Resources and Forestry (MNR) Aylmer District;
- Ministry of Environment, Conservation and Parks (MECP) Species at Risk;
- Government of Canada Species at Risk Act (SARA) Registry;
- Ontario Breeding Bird Atlas (OBBA, Bird Studies Canada (BSC) et al. 2006);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2019);
- Mammal Atlas of Ontario (Dobbyn 1994);
- Ontario Butterfly Atlas Online (Macnaughton et al. 2020); and
- Ontario Odonata Atlas Database (OOAD 2022).

Species lists were compiled to provide information on species reported from within the vicinity of the study area based on data available from the wildlife atlases listed above. These atlases provide data based on 10x10 km survey squares. Information on species from the survey squares that overlap with the study area (17MH75) were compiled. These initial species lists were used to guide the scope and type of wildlife field surveys required.

3.1.2 Significant Species Screening

Based on the compiled species lists for the study area, a screening exercise was completed to assess the potential for reported Species at Risk (SAR) and Species of Conservation Concern (SCC) to occur in the study area. This involved cross-referencing the preferred habitat for reported SAR and SCC (MNR 2000, Oldham and Brinker 2009, Eakins 2017, Reznicek et al. 2011) against habitats known to occur in the study area. This exercise was completed to ensure that the potential presence of all SAR and SCC within the study area was adequately assessed in this study.

Species at Risk are those listed on the SAR in Ontario List (SARO) (MECP 2021). These include species identified by the Committee on the Status of Species at Risk in Ontario (COSSARO) as provincially Endangered, Threatened, or Special Concern. Species listed by COSSARO as Endangered or Threatened are protected by the *Endangered Species Act, 2007* (ESA), which includes protection of their habitat, and are referred to as regulated SAR. Species listed as Special Concern are included in the definition of SCC, which includes the following:

- Species designated provincially as Special Concern;
- Species that have been assigned a conservation status (S-Rank) of S1 to S3 or SH by the NHIC; and
- Species that are designated federally as Threatened or Endangered by the Committee for the Status of Endangered Wildlife in Canada (COSEWIC), but not provincially by COSSARO. If these species are listed under the Species at Risk Act (SARA) under Schedule 1 they are protected by the federal Act but not provincially by the ESA.

Based on the initial species lists, a total of 12 SAR and 8 SCC, were identified as having records from within the vicinity of the study area. Full SAR/SCC screening results are provided in Appendix III.

3.1.3 Significant Wildlife Habitat Screening

A screening exercise was completed to assess the presence of Significant Wildlife Habitat (SWH) within the study area. SWH is protected under the Ontario Provincial Policy Statement (PPS) (OMMAH 2020) and is described in the MNR Significant Wildlife Habitat Technical Guide (SWHTG) (MNR 2000) as being comprised of four major categories of habitat:

- Seasonal concentration areas;
- Specialized wildlife habitat and rare vegetation communities;
- Habitats of species of conservation concern; and
- Wildlife movement corridors.

Specific criteria defining wildlife habitat significance for Ecoregion 7E are described in the SWHTG Addendum (MNR 2015). Individual SWH types within these four broad categories were assessed as either not present, candidate, or confirmed for the study area based on a comparison of significance criteria against information obtained from relevant background documents.

Based on the preliminary background review, one SWH type was identified as candidate within the greater study area and are discussed further in Section 4. Full SWH screening results are provided in Appendix IV.

3.2 Field Methods

The type and scope of study methods was determined in consultation with the City of London and UTRCA and is detailed in the Environmental Study Scoping Checklist, which is appended to this report (Appendix II).

Field Surveys

Field surveys were undertaken within the study area to characterize natural features and identify significant and sensitive natural heritage features and species that have potential to be adversely affected by the proposed development. A total of one field visit was completed on May 4th, 2022. A variety of field surveys were undertaken, which are described in detail below and summarized in Table 2. Surveys conducted were undertaken in accordance with provincial and local guidance documents as indicated below.

Table 2. Field Survey Summary.

Survey	Protocol	Dates (2022)
Ecological Land Classification	Ecological Land Classification for Southern Ontario (Lee et al. 1998)	May 4
Vegetation Inventory	Systematic area searches	May 4
Tree Inventory	City of London Tree Preservation By-law (2021)	May 4
Bat Habitat Assessment	Survey Protocol for Species at Risk Bats in Treed Habitats (MECP 2022)	May 4

3.2.1 Vegetation Surveys

A vegetation community delineation was completed using aerial photography and thorough investigations in the field conducted on May 4th, 2022. The standard Ecological Land Classification (ELC) System for southern Ontario was applied (Lee et al. 1998). Details of vegetation communities were recorded including species composition, dominance and uncommon species or features.

All observed species of vascular flora within the subject property were recorded during each visit conducted in conjunction with vegetation community delineations.

3.2.2 Tree Inventory

An inventory of all trees with the potential to be impacted by the proposed works was completed on May 4th, 2022 by NRSI staff. Trees ≥ 10 cm in Diameter at Breast Height (DBH) were assessed by a Certified Arborist. The location of trees inventoried was surveyed using an SXBlue II GNSS GPS unit, capable of sub-meter accuracy. A complete list of the trees that were assessed and their overall health and potential for structural failure is included in the Tree Preservation Plan (Appendix VI).

The following information was recorded for each tree:

- Species,
- Numeric identifier,
- Number of stems,
- DBH (centimetres),
- Approximate crown radius (metres),
- General health (excellent, good, fair, poor, very poor, dead),
- Potential for structural failure (improbable, possible, probable, imminent),
- Tree location (on-site/off-site/boundary), and
- General comments (i.e. disease, aesthetic quality, development constraints, sensitivity to development).

3.2.3 General Wildlife

All observations of birds, mammals, herpetofauna and insects were documented on all field visits. This included actual direct observations of individuals, as well as signs of wildlife presence (i.e. tracks, scats, dens, nests etc.).

3.2.4 Significant Wildlife Habitat Assessment and SAR Habitat

SWH types and SAR habitats identified as potentially occurring within the study area (i.e. Candidate) during the background review were further assessed for their presence in the field during all surveys.

3.3 Results and Discussion

3.3.1 Vegetation Communities

A summary of ELC communities identified within and adjacent to the subject property is provided in Table 3 and shown on Map 2.

Table 3. Ecological Land Classification Community Descriptions.

ELC Code	Community Type	Community Description
CUW1	Mineral Cultural Woodland Ecosite	The subject property is classified entirely as mineral cultural woodland. A small portion of paved driveway abuts the northeastern edge of the property. The canopy and sub-canopy are dominated by young to mid-aged Black Walnut (<i>Juglans nigra</i>), with lesser amounts of Eastern Cottonwood (<i>Populus deltoides</i>). In the understory, shrubs and vines such as Black Raspberry (<i>Rubus occidentalis</i>), invasive Tatarian Honeysuckle (<i>Lonicera tatarica</i>), and Virginia Creeper (<i>Parthenocissus vitacea</i>) are found. The herbaceous groundcover is dominated by common disturbed meadow species including Tall Goldenrod (<i>Solidago altissima</i>), Smooth Brome (<i>Bromus inermis</i>), and Kentucky Bluegrass (<i>Poa pratensis</i>). Common Reed (<i>Phragmites australis</i>) can be found bordering the community adjacent to the roadside.

3.3.2 Vascular Flora

A total of 24 plant species were observed by NRSI biologists within the subject property during vegetation inventories. A complete list of all observed species and species reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, one SCC plant species has been reported in the vicinity of the study area, the Green Dragon (*Arisaema dracontium*), however no suitable habitat for this species occurs on the subject property. Appendix III provides a summary of significant species reported from the vicinity of the study area, including their current status ranks and preferred habitats. NRSI conducted a thorough review of the area for Butternut trees and saplings however we did not observe any provincially or federally significant species within the subject property during the 2022 field season.

3.3.3 Tree Inventory

In total, 52 trees were inventoried, comprising three species: Black Walnut (*Juglans nigra*), Eastern Cottonwood (*Populus deltoides*), and Crack Willow (*Salix euxina*). Of the trees inventoried and assessed, 51 (98.1%) are native species and one (1.9%) Crack Willow is non-native. The Tree Preservation Plan can be found in Appendix VI.

3.3.4 Wildlife

Birds

A total of 91 bird species are reported from the study area or vicinity based on the OBBA and NHIC database (BSC et al. 2009, MNRF 2019a). The data documented by the OBBA includes those species that have been observed in the area (10x10 km range), are known to nest in the area, and/or have exhibited some evidence of breeding in the area. A complete list of species reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, five bird SAR and three bird SCC have been reported in the vicinity of the study area (BSC et al. 2009, MNRF 2019a). The subject property was not observed to provide suitable habitat for any of these species. Appendix III provides a summary of significant species reported from the vicinity of the study area, including their current status ranks and preferred habitats.

Herpetofauna

A total of 26 herpetofauna species are reported from the study area or vicinity based on the ORAA and NHIC database (Ontario Nature 2019, MNRF 2019a). A complete list of all observed species and species reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, four herpetofauna SAR and two herpetofauna SCC are reported from the vicinity of the study area (Ontario Nature 2019, MNRF 2019a). Appendix III provides a summary of significant species reported from the vicinity of the study area, including their current status ranks and preferred habitats. No regionally, provincially or federally significant species were observed within the subject property during 2022 field surveys. No suitable habitat for breeding amphibians or suitable features for reptile hibernation were identified on the subject property. Due to the isolated nature of the subject property, in general herpetofauna habitat is limited.

Mammals

A total of 43 mammal species are reported from the study area or vicinity based on the Mammal Atlas of Ontario and NHIC database (Dobbyn 1994, MNRF 2019a). A complete list of all observed species and species reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, three mammal SAR and one mammal SCC are reported from the vicinity of the study area (Dobbyn 1994, MNRF 2019a). Appendix III provides a summary of significant species reported from the vicinity of the study area, including their

current status ranks and preferred habitats. No regionally, provincially, or federally significant species were observed within the subject property during 2022 field surveys.

Candidate habitat for SAR bats was identified during the SWH screening and therefore a bat habitat assessment was conducted on the subject property. Results of the assessment can be found in Section 4.2.

Butterflies

A total of 40 butterfly species are reported from the study area or vicinity based on the Ontario Butterfly Atlas and NHIC database (MacNaughton et al. 2019, MNRF 2019a). A complete list of all observed species and species reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, one species of Nymphalidae SCC is reported from the vicinity of the study area (MacNaughton et al. 2019, MNRF 2019a). Appendix III provides a summary of significant species reported from the vicinity of the study area, including their current status ranks and preferred habitats. No regionally, provincially or federally significant species were observed within the subject property during 2022 field surveys.

Odonates

A total of 34 odonate species are reported from the study area or vicinity based on the Ontario Odonate Atlas and NHIC database (MNRF 2019b, MNRF 2019a). A complete list of all observed species and species reported from the vicinity of the study area is provided in Appendix V.

Based on available background information, no SAR or SCC species are reported from the vicinity of the study area and there is limited habitat for Odonates in general present. No regionally, provincially or federally significant species were observed within the subject property during 2022 field surveys.

4.0 Evaluation of Significance

An analysis of the significance and sensitivity of existing natural features within the subject property was completed in order to identify those features and habitats that are sensitive to disturbance. This analysis is based on the rarity or significance of features and/or associated functions/processes and/or current policies, legislation, or planning related studies. Such features and functions identified as sensitive to disturbance are further identified as 'constraints' to development, prohibiting or constraining aspects of any proposed development around or within them. The analysis is also used to identify 'opportunity' areas that have been previously disturbed or contain no natural features where potential for habitat rehabilitation or enhancement exists. These areas allow for possible development that would have less of a direct impact in comparison to areas with natural features and potential wildlife habitat. Results of this analysis are provided in the following sections to inform the development plan.

4.1 Significant Wildlife Habitat

Based on the results of a comprehensive background review and field studies, one SWH type remains as candidate within the larger study area.

Candidate: Waterfowl Stopover and Staging Area

Agricultural fields within the greater study area likely flood with sheet water in the spring, providing important invertebrate foraging habitat for migrating waterfowl. This candidate SWH is located well outside the area of potential impact and will not be negatively affected by the proposed construction.

4.2 Habitat of Endangered and Threatened Species

Based on the results of a comprehensive background review, suitable habitat for the SAR species Butternut (*Juglans cinerea*) had been identified within the subject property as well as candidate habitats for species at risk bats.

The site visits determined that no Butternuts or suitable Butternut habitat is present within the subject property.

A bat habitat assessment was conducted during the site visit to the subject property. The results of the assessment show that there is no suitable roosting habitat for Northern Myotis (*Myotis septentrionalis*) and Eastern Small-footed Myotis (*Myotis leibii*) within the subject property.

4.3 Summary of Natural Feature Constraints

Table 4. Summary of Natural Feature Constraints.

Natural Feature Constraint	Regulatory and Permitting Considerations	Project Considerations
Significant and Unevaluated Wetlands	<ul style="list-style-type: none"> • Provincial Policy Statement (OMMAH 2020) • Environmental Planning Policy Manual (UTRCA 2006) • UTRCA Ont. Reg. 150/06 • The London Plan (City of London 2019) 	<ul style="list-style-type: none"> • No Significant or Unevaluated Wetlands are present within the subject property or subject area.
Watercourse and Fish Habitat	<ul style="list-style-type: none"> • Provincial Policy Statement (OMMAH 2020) • Environmental Planning Policy Manual (UTRCA 2006) • UTRCA Ont. Reg. 157/06 • Federal Fisheries Act (1985) • The London Plan (City of London 2019) • County of Middlesex Official Plan (Middlesex County 2006) 	<ul style="list-style-type: none"> • No watercourses or fish habitats are present within the subject property or subject area.
Habitat for Threatened and Endangered Species	<ul style="list-style-type: none"> • Endangered Species Act, 2007 • Species at Risk Act • Provincial Policy Statement (OMMAH 2020) • Environmental Planning Policy Manual (UTRCA 2006) • The London Plan (City of London 2019) 	<ul style="list-style-type: none"> • No SAR habitat for SAR were identified within the subject property.
Significant Wildlife Habitat	<ul style="list-style-type: none"> • Provincial Policy Statement (OMMAH 2020) • Environmental Planning Policy Manual (UTRCA 2006) • The London Plan (City of London 2019) 	<ul style="list-style-type: none"> • No Significant Wildlife Habitat are present within the subject property. • Candidate Waterfowl Stopover and Staging Area Habitat has been identified within the agricultural fields within the study area, however habitat will not be negatively affected by the proposed construction.
Potential Naturalization Areas	<ul style="list-style-type: none"> • The London Plan (City of London 2019) 	<ul style="list-style-type: none"> • No Potential Naturalization Areas identified by the London Plan (2019) are present in the study area.
Significant Valleylands	<ul style="list-style-type: none"> • Provincial Policy Statement (OMMAH 2020) • Environmental Planning Policy Manual (UTRCA 2006) • The London Plan (City of London 2019) 	<ul style="list-style-type: none"> • No Significant Valleylands are present within the subject property or subject area.

Unevaluated Vegetation Patch	<ul style="list-style-type: none">• The London Plan (City of London 2019)	<ul style="list-style-type: none">• No Unevaluated Vegetation Patches are present within the subject property or subject area.
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5.0 Impact & Net Effects Assessment

The potential impacts are determined by comparing the characteristics of the existing natural features and their functions to typical residential and construction processes. Where a development proposal overlaps or is adjacent to natural features, impacts may arise.

The following is a description of the types of impacts that have been assessed.

- **Existing** impacts are discussed in relation to impacts from previous or existing land uses or activities that have affected the natural heritage features of the study area.
- **Direct** impacts are discussed in relation to the natural features and wildlife on the subject property associated with disruption or displacement caused by any potential future 'footprint' of an undertaking.
- **Indirect** impacts are discussed in relation to changes in site conditions such as drainage and water quantity/quality on the subject property and adjacent communities.

5.1 Proposed Development

The proponent is proposing to construct a commercial development comprising of two retail buildings (Map 2). The subject property includes compacted soil and is surrounded by paved parking lots and city streets. There are no natural features in proximity to the subject property that would be negatively impacted due to the proposed construction activities.

5.2 Existing Impacts

There are no natural features within close proximity to the study area that would be negatively impacted by the proposed construction. However, the subject property currently contains a number of invasive species, including Tararian Honeysuckle, and Garlic Mustard (*Alliaria petiolate*), and has been degraded by urban pollution such as garbage and road salt.

Mitigation, Protection & Compensation

The proposed development would require the removal of vegetation within the subject property, including the invasive species. Removing the invasive species from the property will stop their spread into surrounding area and into the greater surrounding natural features outside of the study area. Native, non-invasive plant species should be used in any future landscaping plans for the proposed development.

5.3 Direct Impacts

As there are no wetlands, woodlands, aquatic areas, or wildlife habitats within close proximity to the study area that would be negatively impacted by the proposed construction, the direct impacts would only include the vegetation and tree removal on the subject property.

5.3.1 Vegetation and Tree Removal

The removal of isolated trees, as well as minor injury to tree limbs or their root systems from machinery and construction activities (e.g., grading, excavation, etc.) will occur. A Tree Preservation Plan (TPP) has been requested by the City of London and proposed in the approved Terms of References for the subject property (Appendix I). The TPP must be compliant with Section 12 of the *Design Specifications & Requirements Manual, Tree Planting and Protection Guidelines* (City of London 2018). When determining which trees are to be retained, both tree quality and development constraints should be considered.

The development proposes to remove some of the existing vegetation on the property. This vegetation removal has the potential to impact urban wildlife that may occur on the property.

Mitigation, Protection & Compensation

A TPP has been developed for this property and can be found in Appendix VI. TPZs will be established along the eastern boundary to protect boundary and off-property trees in accordance with the design specifications (City of London 2018), to minimize grading and construction damage. TPF will be erected prior to any construction activity and be placed along the limits of the TPZ. The TPF is to be inspected by a Certified Arborist or Registered Professional Forester prior to the commencement of work. These barriers are to be maintained throughout the construction period to ensure the protection of retained trees and their root systems, and trees will be inspected post-construction for damage.

The Canadian Wildlife Service (CWS) recommends that no vegetation clearing occurs during peak breeding season for migratory birds, between April 1 and August 31 (CWS 2017). Removal of trees and meadow vegetation should occur outside of the active breeding season. Any planting plans should be designed to incorporate species that provide forage and nectaring opportunities for wildlife. This mitigation will ensure no net effect.

5.3.2 Erosion and Sedimentation

During construction, areas of bare soil may be exposed that have the potential to erode during precipitation events and impact adjacent features. In the event of a heavy rain or snow melt event, sediment laden runoff can enter adjacent features by way of overland flow. In order to protect these off-site features from potential impacts due to sediment, an ESC plan should be developed and implemented prior to any construction activities on site, including any vegetation removal and clearing.

Mitigation, Protection & Compensation

Heavy-duty filter fabric ESC fencing should be installed along the limit of disturbance prior to any form of development or site alteration, including any vegetation removals and clearing and grubbing. The heavy-duty ESC fencing should be combined with TPF where possible. The heavy-duty ESC is to be maintained in good working order by the developer and/or their representative for the entire construction phase, and be removed once all development is complete and exposed soils are stabilized to the satisfaction of the Contract Administrator and/or Environmental Monitor. Any exposed soils and steep slopes within the subject property will require special care to avoid erosion and sedimentation, and should be seeded immediately following grading activities. This mitigation will ensure no net effect.

5.4 Indirect Impacts

There will be no indirect impacts to the subject property as there are no natural features within close proximity to the study area that would be negatively impacted by the proposed construction.

6.0 Environmental Management Recommendations

6.1 Planning and Design Stage

- Incorporate the proposed tree removal compensation plantings into a Landscape or Planting Plan that also identifies restoration areas. This plan should propose the use of native species suitable to the subject property and surrounding area, whose selection has been informed by the natural inventory work completed on the property;
- An updated Tree Preservation Plan should be completed if changes are proposed to the grading and site plan.

6.2 Construction Stage

- A combined sediment and erosion control fence (i.e. silt fence) and Tree Protection Fencing (TPF) is recommended to be situated adjacent to the limit of disturbance. The installation and location of the TPF is to be inspected by a Certified Arborist before any construction activities begin, and maintained by the developer during the entire construction period. Any minimal damage (i.e. damage to limbs or roots) to trees to be retained during construction must be pruned using proper arboricultural techniques. Should any of the trees intended to be retained be seriously damaged or die as a result of construction activities, consultation with the City will be required. More information regarding TPF can be found in the Tree Preservation Plan (Appendix VI);
- Tree removal should be restricted to outside the peak breeding season window for migratory birds (April 1- August 31);

6.3 Post- Construction Stage

- TPF and additional ESC fencing should be removed upon completion of construction activities. A Certified Arborist should be on site to monitor the removal of the TPF and inspect retained trees and their rooting area. Possible remediation work may be needed if retained trees or root zones are damaged.

7.0 Conclusions

Natural Resource Solutions Inc. (NRSI) was retained by private landowner Dr. Raj Khanuja to complete a Scoped Environmental Impact Study (EIS) and Tree Preservation Plan in support of a proposed retail development at 38 Exeter Road in London, Ontario (Map 1).

The subject property is approximately 0.42ha in size and is located northwest of the intersection of Exeter Road and Wonderland Road South. The property contains treed areas and sits adjacent to retail areas and agricultural lands.

No confirmed Species at Risk, Species of Concern, or SWH were found on the subject property. Mitigation and protection measures recommended in Section 7 (Environmental Management Recommendations) of this report should be considered necessary to minimize the impact of the development on the ecological features and functions of the subject area. As demonstrated in the Net Effects Assessment (Appendix VII), assuming the recommend avoidance, mitigation and compensation measures are implemented properly, no negative impacts on the natural features or on their ecological functions should occur on the subject property.

At this stage of the proposed project all intent and requirements of the environmental policies of the City of London Plan, Provincial Policy Statement and other relevant legislation have been met (see Table 1).

8.0 References

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